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7590 06/27/2006			EXAMINER	
ALFRED W. KOZAK UNISYS CORPORATION 10850 VIA FRONTERA, MS 1000 SAN DIEGO, CA 92127			DATSKOVSKIY, SERGEY	
			ART UNIT	PAPER NUMBER
			2121	

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Please find below and/or attached an Office communication concerning this application or proceeding.



## **DETAILED ACTION**

### **Status of the claims**

Claims 1-18 were originally presented. After the First Non-final Office Action, claims 1, 4, 6, 8-10 and 12-16 were amended. Claims 1-18 are still pending in the Instant Application.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-3 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Collins ("Parallel and Sequential Job Scheduling in Heterogeneous Clusters: A Simulation Study using Software in the Loop").

### **Claim 1**

Collins teaches a system for component balancing in the processing of multiple transactional (being "transactional", i.e. representing or recording a business action of financial exchange, does not affect structure of the system or the applied algorithm, and therefore, is not given any patentable weight) applications as implemented on a computer and wherein said processing normally follows a preset execution profile

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(Abstract, disclosed as job scheduling in a parallel computing environment), said system comprising:

(a) means to establish and maintain response time goals for methods (page 3, section 2.2, lines 1-6 disclose choosing and weighting a metric of performance according to the values and priorities of the users. Response time goals are maintained by Parallel Job Scheduler (PJS, see page 5, chapter 3) that maintains the execution times in a database (page 7, lines 14-18));

(b) means to delay other associated methods to optimize the processing of selected more significant methods (priority scheduling, page 15, chapter 5.3, paragraph 2) wherein said means to delay operates to change the execution profile of said multiple transactional applications (changing job priorities inherently changes the characteristics of execution, i.e. an execution profile).

## **Claim 2**

Collins teaches the system of claim 1 which includes:

(c) means for sensing when an increased load is occurring in order to increase said delay applied to less-significant methods (resource-monitoring tool, page 6, second paragraph; page 18, last paragraph discloses an ability to preempt low-priority jobs, *i.e.* increase their scheduling delay by running other jobs first).

## **Claim 3**

Collins teaches the system of claim 2 which includes:

(d) means for sensing when said load is decreasing in order to reduce the delay time applied to other associated methods (resource-monitoring tool, page 6, second paragraph; page 12, first paragraph describes running scheduled jobs in parallel when available resources allow it).

### **Claim 13**

Collins teaches in a component balancer system, utilizing a computer for storing and executing a software program, a method for optimizing the processing of component-based transactional (being “transactional”, i.e. representing or recording a business action of financial exchange, does not affect structure of the system or the applied algorithm, and therefore, is not given any patentable weight) applications (Abstract, disclosed as job scheduling in a parallel computing environment), comprising the steps of:

(a) securing a list of transactional applications to be optimized (page 7, third paragraph from the bottom, disclosed as a list of jobs in job queues);

(b) prioritizing said list according to a priority assigned to each transactional application (priority scheduling, page 15, chapter 5.3, paragraph 2);

(c) accessing and capturing all or user selected components associated with said transactional applications (page 7, paragraph 4);

(d) analyzing which methods of which component should be optimized (page 9, chapter 4, first paragraph; analysis is done during the loop simulation).

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**Claim 14**

Collins teaches the method of claim 13 wherein step (d) includes the step of:

(d1) automatically optimizing the processing sequence of said transactional applications (page 12, lines 10-11; scheduling algorithm is designed to optimize performance by optimizing the processing sequence).

**Claim 15**

Collins teaches the method of claim 13 wherein step (d) includes the step of:

(d2) manually optimizing the processing sequence of said transactional applications (optimization can be done manually by setting the priorities before scheduling, page 15, chapter 5.3, paragraph 2).

2. Claims 4-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Snelick ("S-Check: a Tool for Tuning Parallel Programs").

**Claim 4**

Snelick teaches a method for balancing and optimizing the processing of component transactional (being "transactional", i.e. representing or recording a business action of financial exchange, does not affect structure of the system or the applied algorithm, and therefore, is not given any patentable weight) methods said methods utilizing a computer for storing a software program and executing said method

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(disclosed as a software that optimizes parallel programs, see page 107, Abstract), comprising the steps of:

- (a) selecting component transactional methods to gather runtime data from selected components (disclosed as selecting test points, see page 109, chapter 3.1, first paragraph);
- (b) calculating statistical metrics between pairs of said transactional methods (A,B,C,...N) (page 108, Figure 1, steps 4 and 5, bottom paragraph);
- (c) using statistical significance tests on said metrics to select certain transactional methods for optimization and delay in processing (optimization is disclosed by automatically determining the appropriate delay values, see page 110, left column, last whole paragraph).

#### **Claim 5**

Snelick teaches the method of claim 4 which includes the step of:

- (d) establishing a goal of specified response time for each method (A,B,C,...N) selected from step (c) (page 109, right column, lines 3-8).

#### **Claim 6**

Snelick teaches the method of claim 5 wherein step (d) includes the steps of:

- (d1) targeting specific groups of methods for delay (page 109, Figure, chapter 3.1, lines 7-9) wherein said delay will change the execution profile of said

transactional methods (delays change execution times, thus changing the execution profile);

(d2) setting specified response times as a goal for said specific groups (page 109, right column, lines 3-8, response times can be set for a selected section of code).

#### **Claim 7**

Snelick teaches the method of claim 6 wherein step (d) includes the step of:

(d3) establishing a response time goal for each method from a setting of no delay in a method, to a maximum delay in a method (page 108, left column, lines 3-8, delays can be turned off; delays can be set to any maximum value (page 110, left column, last whole paragraph)).

#### **Claim 8**

Snelick teaches the method of claim 7 which includes the step of :

(e) graphically displaying individual response time for optimized methods against the response time goal set for a method (page 110, chapter 3.4).

#### **Claim 9**

Snelick teaches in a component balancer system utilizing a computer for storing and executing a software program, a process for optimizing the sequence of processing component-based transactional applications (disclosed as a software



that optimizes parallel programs, see page 107, Abstract). comprising the steps of:

- (a) selecting several methods (A,B,C, . . . N) to be conditioned for analysis (disclosed as selecting test points, see page 109, chapter 3.1, first paragraph);
- (b) gathering runtime data from said selected methods in order to find statistical operating significance between selected pairs (AB, BA, AC, CA, BC, CB,... of methods (page 108, Figure 1, step 3, bottom paragraph);
- (c) collecting data to get a representative workload involving said pairs (AB, BA, AC, CA, BC, CB,...) of said selected methods (page 108, Figure 1, step 4, bottom paragraph);
- (d) establishing an analysis report to determine when said method pairs (AB, BA, AC, CA, BC, CB, are processed to determine the average response time for processing when methods A,B,C,... N are run singly (non-overlapped) and when method pairs are run overlapped as AB, BA, AC, CA, BC, CB, ... (page 108, Figure 1, step 5, bottom paragraph)

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Ferguson et al. (US Patent No. 5,504,894).

#### **Claim 1**

Ferguson teaches a system for component balancing in the processing of multiple transactional applications as implemented on a computer and wherein said

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processing normally follows a preset execution profile (see Abstract), said system comprising:

(a) means to establish and maintain response time goals for methods (col. 3, lines 5-17; response time goals are established by an operator and maintained by a workload manager);

(b) means to delay other associated methods to optimize the processing of selected more significant methods (delays are disclosed by queuing, see col. 5, lines 43-47, col. 7, lines 7-14, and col. 11, lines 36-38) wherein said means to delay operates to change the execution profile of said multiple transactional applications (adjusting scheduling priorities inherently changes the execution time characteristics, and therefore changes the execution profile).

### ***Allowable Subject Matter***

Claims 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 16-18 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: As per claims 10 and 16, the prior art of record taken alone or in combination fails to teach that the optimization is being effectuated by injecting code into a running application. Claims 11-12 and 17-18 are indicated allowable based on their dependency upon allowable claims 10 and 16, correspondingly.

### ***Response to Arguments***

Applicant's arguments filed on April 18, 2006 have been fully considered but they are not persuasive. The unpersuasive arguments made by Applicant are stated below:

Applicant argues that current application differentiates from the prior art based on the fact that computer applications mentioned in claims are *transactional* applications. "Transactional" means *representing or recording a business action of financial exchange*. However, the fact that the applications are classified as transactional does not have any effect on the structure of the claimed system or the claimed algorithm used to implement load balancing and optimizations of applications running on a computer. The nature of claimed computer algorithm does not depend in any way on the fact that the applications are related to business or any other area of interest. It appears that Applicant addresses "transactional applications" as interactive and Web-based (Remarks, page 33). However, such qualities are neither listed in claims, nor implied by the term "transactional". Therefore, the limitation of having "transactional" applications is not given any patentable weight, since it has no effect on the structure of the claimed system and method.

Additionally, Applicant argues that Collins does not teach a number of limitations mentioned in Remarks on page 36. Examiner points out that these limitations are anticipated by Collins, as have been shown in the previous Office Action, and repeated in the U.S.C. 102 rejection above. Specifically, setting up response time goal is described in claim 1, while automatic and manual optimizations are described in claims

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14 and 15, correspondingly. Examiner agrees with Applicant that Collins does not teach other limitations, such as providing a possibility for setting-up of a no-delay in a method to a maximum delay, calculating statistical metrics between "pairs", and having adjustment means where a delay increment is provided according to the load on the system as sensed by the number of calls per-second. However, all of these limitations belong to claims that were not rejected based on Collins. These claimed limitations are anticipated by Snelick, as shown in the rejection under 35 U.S.C. 102(b) based on Snelick, above. Thus, arguing that Collins does not teach these features is irrelevant, and can not affect state of the rejection. Examiner agrees that if we view the application as a whole, including all claims and the specification, it will very likely be distinguishable over prior art. However, the goal of examination lies in determining if *claimed* invention is novel over discovered prior art. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chu et al. (US Patent No. 5,367,473) teaches expert system for computer system resource management. Johnson (US App. No. 2004/0123293) teaches correlating transaction token pairs.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

#### **Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sergey Datskovskiy whose telephone number is (571) 272-8188. The examiner can normally be reached on Monday-Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight, can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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S.D.

Assistant examiner

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A handwritten signature in black ink, appearing to read 'Anthony Knight', is positioned above the printed name.

Anthony Knight

Supervisory Patent Examiner

Technology Center 2100